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Linkages between parental reports of marital conflict and youth maladjustment have been established, but less is known about the role of youth's own perceptions of and their involvement in parental marital conflict. Drawing on family systems and social learning perspectives, a primary goal of this study was to examine the association among three indicators of parental marital conflict and both youth maladjustment and sibling conflict. The three measures of marital conflict examined here included: 1) parental and 2) youth reports of the frequency of parental marital conflict and 3) youth reports of their involvement in parental marital conflict. A secondary goal of this study was to test whether linkages between parental marital conflict and outcomes differed by age and sex. Data came from 165 youth, ages 9 to 18 years old ($M = 11.6$, $SD = 2.0$). Hierarchical regression analyses in STATA were used to test all study hypotheses. Results indicated that none of the marital conflict variables were associated with maternal reports of maladjustment when common covariates of both marital conflict and youth adjustment (i.e., maternal depressive symptoms and parent-child relationship) had been taken into account. Youth-report of parental marital conflict was associated with youth reports of maladjustment. Furthermore, both maternal and youth reports of marital conflict explained significant variance in sibling conflict. Assessing youth reports of marital conflict over and above parental reports of marital conflict may further help understand associations between parental marital conflict and both youth adjustment and relationship qualities.

PARENTAL MARITAL CONFLICT AND YOUTH MALADJUSTMENT

By

Timothy Wright Boyd II

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Approved by

Committee Chair

APPROVAL PAGE

This thesis has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair _____

Committee Members _____

Date of Acceptance by Committee

Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

Associations between the frequency of parental marital conflict and youth maladjustment are well established (Amato & Keith, 1991; Buehler et al., 1997; see Cummings & Davies, 2002; Fincham, 1994, for reviews), including associations with internalizing symptoms such as depression (see Emery, 1982, for reviews; Grych & Fincham, 1990; Wang & Crane, 2001) and externalizing symptoms such as risk-taking behaviors (e.g., Gerard, Krishnakumar, & Buehler, 2006; Jenkins et. al , 2005; Keller, Cummings, Davies, & Mitchell, 2008; Richmond & Stocker, 2008). These associations are typically based on *parental* or *observer* reports of parental marital conflict (e.g., Amato, Loomis, Booth, 1995; Jekielek, 1998; Keller, Cummings, Peterson, & Davies, 2008; Kelly, 2000), and are moderate in size, indicating that not all youth from homes with parental marital conflict develop maladjustment. Indeed, stress research suggests that youth's own perceptions of parental marital conflict may be crucial in determining whether maladjustment will occur (Lupien et al., 2006). The present study examines both youth and parent reports of the frequency of parental marital conflict and youth reports of their involvement in their parents' conflict to further illuminate the link between parental marital conflict and youth maladjustment.

Youth maladjustment, as indicated by internalizing and externalizing symptoms, is not the only outcome associated with parental marital conflict; relationship qualities

may also be associated with it. Both social learning and family systems theory suggest that conflict in one family subsystem could be learned and/or spill over to other family subsystems (Cox & Paley, 2003; Margolin, Christensen, & John, 1996), as has been shown by a body of research linking parental marital conflict with parent-child conflict (Amato, Loomis, & Booth, 1995; Bolger et al., 1995; Erel & Burman, 1995), and youths' own romantic relationships later in life (Amato & Booth, 2001). Less is known regarding spillover from marital to sibling conflict, but the limited number of studies in this area suggests that sibling relationships are marked by more conflict when parents have a conflictual marriage (Brody, Stoneman, & McCoy, 1994; Erel, Margolin, & John, 1998; Jenkins, 2000; Panish and Stricker, 2001; Poortman and Voorpostel, 2009).

To date, there is some, albeit inconsistent support indicating that associations between parental marital conflict and outcomes may vary by youth age and sex (Cummings, Davies, & Simpson, 1994; Dahl & Gunnar, 2009; Davies and Lindsay, 2004; Davies & Windle, 1997; Gerard et. al, 2005; Kerig, 1996; Natsuaki et. al, 2009). Younger adolescents who still spend much of their time at home may be more strongly affected by marital conflict than older adolescents who expand their social worlds beyond the home (Brody, Stoneman, & McCoy, 1994; Buhrmester & Furman, 1990). With respect to sex, some studies suggest that boys display more maladjustment than girls in times of parental marital conflict (Cummings, Davies, & Simpson, 1994; Emery & O'Leary, 1982; Kerig, 1996). Others, however, have reported that exposure to parental marital conflict increases girls' vulnerability to maladjustment, particularly internalizing symptoms (Davies & Lindsay, 2004; Davies & Windle, 1997; Gerard et. al, 2005;

Natsuaki et. al, 2009). The sibling sample used here includes younger and older adolescents and males and females; therefore, the present study will examine whether associations between parental marital conflict and outcomes are moderated by sex, age, and/or both.

This literature review begins by describing the prevalence of parental marital conflict and links between such conflict and youth maladjustment. Next, youth involvement in parental marital conflict and its links to maladjustment will be examined. Next, findings on how parental marital conflict is associated with sibling conflict will be discussed. Finally, this review will examine how sex and age may moderate associations between parental marital conflict and youth maladjustment. The literature review concludes with four hypotheses about the frequency of parental marital conflict, youth involvement in parental marital conflict, youth maladjustment, and sibling conflict.

Parental Marital Conflict and Youth Maladjustment

Prevalence of Marital Conflict. Marital conflict is common. Maritally intact marriages are frequently characterized by some degree of conflict (Amato & Afifi, 2006; Cummings, 1994), triggered, for example, by stress (Emery, 1982; Grych & Fincham, 1990) and daily hassles (Abidin, 1992; Bolger et al., 1989; Elder, Nguyen, & Caspi, 1985; Ledermann, Bodenmann, Rudaz, & Bradbury, 2010). Furthermore, a recent U.S. Census report (2009) stated that the current divorce rate in the United States exceeds 50 percent. And, many of these divorces are preceded by high levels of parental marital conflict (Amato & Cheadle, 2008). Considering these statistics, many youth face at least occasional conflict between their parents, and this conflict has been linked to youth

maladjustment (Ablow et. al, 2009; Buehler et. al, 1997; Cummings & Davies, 1994; Erel & Burman, 1995; Grych & Fincham, 1990).

Frequency of Parental Marital Conflict. Most research on parental marital conflict focuses on its frequency, which is typically assessed by asking parents (generally mothers) how often they fight, argue, or disagree with their spouse, how often they and their spouse are angry at each other, and how often they and their spouse express this anger (e.g., by shouting and yelling). The frequency of parental marital conflict has been positively associated with youth maladjustment: Youth whose parents argue with high frequency have a higher probability of scoring higher on internalizing and externalizing symptoms compared to youth whose parents do not report arguing frequently (Buehler et. al, 1997; Cummings & Davies, 1994; Fincham, 1994; Wang and Crane, 2001). Several mechanisms may explain how frequent parental marital conflict is linked with both youth externalizing and internalizing behaviors.

Mechanisms linking parental marital conflict with youth maladjustment. Social learning theory suggests that youth who frequently observe parental marital conflict learn disruptive conflict and aggressive behaviors from parents, resulting in externalizing behaviors (Akers et. al, 1979; Bandura, 1973). Parents serve as important models for youth (Mihalic & Elliott, 1997; Wiese & Freund, 2011). Thus, youth may learn and imitate externalizing-type behaviors by observing parental marital conflict, and, at later points, applying these conflict behaviors to their own behaviors, including interactions with others (Schudlich, Shamir, & Cummings, 2004; Snyder, Bank, & Burraston, 2005).

Stress perspectives may also help explain how parental marital conflict is associated with youth maladjustment. The literature on stress would suggest that when parental marital conflict is perceived as a threat, psychological and physiological stress responses may be activated that will eventually provide a link to child adjustment (Lupien et al., 2006). For example, youth may blame themselves for their parents' conflict (Gerard et. al, 2005), resulting in internalizing symptoms such as anxiety, low self-esteem and guilt (Grych & Fincham, 1993).

Finally, the dynamics in the family system and child behavior may change in the context of marital conflict (Cox & Paley, 2003; Katz & Gottman, 1993; Margolin, Christensen, & John, 1996). Parents' conflict may alter the family climate in a way that negatively impacts other relationships within the family (Amato, Loomis, & Booth, 1995; Bolger et al., 1995; Erel & Burman, 1995). Children may also consciously or inadvertently use problem behaviors to distract parents from their parental marital conflict situations.

Reporters of the Frequency of Parental Marital Conflict. All of the potential mechanisms discussed above imply that youth perceptions of parental marital conflict are important. However, the frequency of parental marital conflict is typically assessed via parental (maternal) reports. Yet, youth whose parents report marital conflict may be heterogeneous in terms of whether they are aware of the conflict (Kerig, 1995), and this awareness may be decisive in whether youth will experience maladjustment (Harold et. al., 1997; Lupien et al., 2006; Ulu & Fisiloglu, 2002). Parents may try to conceal conflict from youth, or youth may not be present during marital conflict (Buehler & Welsh,

2009). Even when youth are present during parental marital conflict, their perception and interpretation of conflict may differ from parents'. Thus, obtaining youth reports of parental marital conflict is important, and past research suggests that children can reliably report on parental marital conflict as early as at ages 5 to 6 (Ablow, Measelle, Cowan, & Cowan, 2009; Jenkins & Buccioni, 2000). The present study will include both parental and youth reports of the frequency of parental marital conflict to examine whether youth reports will be associated with internalizing and externalizing symptoms over and above parental reports.

Youth Involvement in Parental Marital Conflict

Youth whose parents report frequent marital conflict also differ in terms of whether and how they get involved in this conflict. Therefore, youth involvement may further help explain how parental marital conflict translates into youth maladjustment (Grych, Raynor, & Fosco, 2004). Youth can be involved in parental marital conflict behaviorally, meaning that they may attempt to stop parents from fighting, mediate parental marital conflict, or take sides with one or the other parent (Amato & Afifi, 2006; Camara & Resnick, 1989; Mann et al., 1990). Youth can be involved in parental marital conflict emotionally, meaning that they may feel "caught in the middle," distressed, and upset, particularly when the conflict focuses on their own behavior, appearance, and school performance (Buchanan, Maccoby, & Dornbusch, 1991). Such child involvement in marital conflict is sometimes also referred to as "triangulation" (Bowen, 1978; Buehler, Franck, & Cook, 2009; Grych, Raynor, & Fosco, 2004). The present study

attempts to draw a distinction between behavioral and emotional involvement, because they may represent meaningfully distinct aspects of involvement in parents' conflict.

From a developmental point of view, youth who get involved in their parents' conflict move beyond the scope of normative developmental tasks that are appropriate for their age (Minuchin, 1974; Wallerstein, 1983). Such developmentally inappropriate involvement may be stressful for youth, take away time and resources for developing age-appropriate skills, and result in maladjustment. For example, the parentification literature illustrates that children who take on developmentally inappropriate parental roles with their own parents (Chase et al., 2008; Jones & Wells, 2006; Valleau et al., 1995) or siblings (Goetting, 1986) are at higher risk for internalizing and externalizing symptoms.

Indeed, in a few studies that measured inappropriate involvement in parental marital conflict via parental reports and observations, such "triangulation" was linked with depression and anxiety (Amato & Afifi, 2006; Buehler & Welsh, 2009; Gerard et al., 2005; Jacobvitz & Bush, 1996). For example, using a sample of young adolescents, Buehler and Welsh (2009) found that observational measures of youths' triangulation in parents' marital conflict were positively associated with youths' internalizing problems, even when controlling for marital hostility (measured by observation), and youth externalizing behavior (measured by youth report). Similarly, Gerard and colleagues (2005) found that parental reports of triangulation were associated positively with youth problem behaviors in sixth graders. Thus, triangulation in parental marital conflict appears to have a positive association with youth problem behaviors, particularly with

internalizing problems. Little is known, however, about whether youth self-reports of their involvement in parental marital conflict are also linked with maladjustment.

Taken together, youth perception of the frequency of parental marital conflict and their involvement in parental marital conflict may help explain how parental reports of marital conflict are translated into youth maladjustment. The present study is the first to focus on all three: parents' *and* youth report of the frequency of parental marital conflict, and youth report of their involvement in parental marital conflict in the prediction of youth maladjustment.

The present study will also take into account potential alternative explanations for associations between maternal reports of marital conflict and outcomes. For example, maternal depression has been associated with both marital conflict (Forehand et al., 1988) and with youth maladjustment (Fincham and Osborne, 1993). Indeed, in a few previous studies, maternal depression partially accounted for the association between parental marital conflict and maladjustment (Smith & Jenkins, 1991; Davies & Windle, 1997). Similarly, the quality of parent-child relationships may, in part, account for the associations between parental marital conflict and child maladjustment (Erel & Burman, 1995). For instance, parents who are experiencing stress in their marital relationship may interact with their children in less sensitive, more reactive ways, due to the current situation in the marital dyad. Therefore, we must account for maternal depression and the quality of parent-child relationships when studying associations between parental marital conflict and youth maladjustment.

So far, the potential associations of parental marital conflict with youth internalizing and externalizing outcomes have been discussed. Parental marital conflict may also spill over into other family subsystems. Therefore, next, potential associations with sibling conflict will be discussed.

Parental Marital Conflict and Sibling Conflict

Much like social learning theory, a family systems perspective would also predict that conflict among parents will co-occur with conflict among siblings. This perspective (Cox & Paley, 2003; Minuchin, 1974; Minuchin, 1985, Whitchurch et. al, 1993) suggests that youth maladjustment is not the only negative correlate of parental marital conflict, but that the quality of other relationships in the family may also decrease in the context of parental marital conflict. According to family systems theory, each relationship in the family system is a subsystem which is interdependent with other family subsystems. Thus, dynamics in one family subsystem (e.g., conflict in the parental marital relationship) will have implications for dynamics in other family subsystems (e.g., conflict in the sibling relationship).

A family-systemic mechanism that may account for transmission of parental marital conflict to sibling conflict is “spillover.” Spillover refers to the transfer of negative emotions from one dyad in the family to another (e.g., Larson & Almeida, 1999). Almeida, Wethington, and Chandler (1999) performed a study to demonstrate how negative emotion is transferred from the marital dyad to the parent-child dyad. Findings suggested that both mothers and fathers were more apt to have conflictual interactions in other family subsystems within one day of parental marital conflict. Similarly, children

who witness their parents' fighting may be more apt to subsequently fight with their sibling. For example, Jenkins and colleagues (2000) have suggested that children from homes with high marital conflict develop anger organizations. These anger organizations then spill over to children's interactions with their sibling(s), resulting in a higher level of conflict.

To date, empirical studies of spillover from marital dynamics to *sibling* dynamics are limited. Jenkins and colleagues (2000) showed that exposure to marital conflict in young children (ages 4 to 8) generalized to children's conflict behaviors at school, peer, and home settings. These home settings, in many cases, also involve interactions with siblings. Work by Kim and colleagues (2006) examined links between parental reports of marital conflict with sibling conflict in middle childhood and adolescence. Their findings indicated that parental (maternal and paternal) reports of higher marital conflict were significantly predictive of increases in sibling conflict over time. The present study will expand upon this line of research, using youth self-report in addition to parental report of marital conflict, and youth involvement, to assess the association between parental marital conflict and sibling conflict.

Taken together, part of this study will focus on family-level spillover, analyzing how conflict in the marital dyad is associated with conflict in the sibling dyad. It is expected that higher levels of parental marital conflict will be associated with greater levels of sibling conflict. Associations between parental marital conflict and sibling relationships are typically moderate in size or less, suggesting that this association could be further moderated by other factors, including age and sex of the child. Such analyses

should also take into account the sex composition of the sibling dyad, which has been found to predict the quality of sibling relationships in some studies (Brody, 1998; Kim, McHale, Osgood & Crouter, 2006; Updegraff, McHale & Crouter).

Age and Sex as Moderators of Marital Conflict and Outcomes

Past research suggests that age and sex may moderate associations between parental marital conflict and both maladjustment and sibling conflict, but findings are inconsistent to date.

Age. Younger children spend more time at home, and may thus be exposed to more marital conflict compared to older children (Amato & Keith, 1991). Younger children may also lack the ability to put parental marital conflict in perspective. For example, younger children may not understand that some conflict is normative in most relationships (Jenkins & Bucci, 2000). Furthermore, they may be more likely to blame themselves for parental conflict compared to older children (Covell & Abramovitch, 1987; Kurdek, 1986). Thus, compared to older children/adolescents, younger children may show exacerbated distress in parental marital conflict situations (see Cummings & Davies, 1994 for review). Alternatively, some research has indicated that adolescents may have increased reactivity in the face of stressors (Dahl & Gunnar, 2009). Therefore, adolescents may be more responsive to parental marital conflict. To date, there is mostly support for a stronger association between marital conflict and outcomes for younger children (Amato & Keith, 1991; Covell & Abramovitch, 1987; Jenkins & Bucci, 2000; Kurdek, 1986), but also some support for a stronger association in adolescents (Dahl & Gunnar, 2009).

Sex may also moderate the association between parental marital conflict and youth maladjustment. Cummings, Davies, and Simpson (1994), for example, found that boys, aged 9 to 12 years old, were more attuned and less shielded from parental marital conflict than girls. Similarly, Jenkins et. al (2005) found that boys (ages 4-17) were exposed to more parental marital conflict over time than were girls of similar ages. Thus, parents may make less of an effort to conceal conflict situations from boys than from girls, resulting in boys' increased exposure to marital conflict.

In addition to potential sex differences in *exposure* to marital conflict, boys and girls may also differ in their *reactions* to it (Davies & Lindsay, 2001). For example, in a rare study assessing children's self-report of parental marital conflict, Emery and O'Leary (1982) found that although both boys and girls (ages 7-18) perceived very similar amounts of marital conflict, boys displayed a stronger association between perceived parental marital conflict and maladjustment, particularly externalizing behaviors. Similarly, Kerig (1996) found that, compared to girls, boys (ages 7 to 11 years old) displayed higher levels of aggression and misbehavior when they were exposed to more frequent parental marital conflict. Indeed, it is possible that boys are more likely to display externalizing behaviors in response to parental marital conflict, perhaps because externalizing behaviors conform to gender role expectations for boys (Davies & Lindsay, 2001). In turn, girls may be more likely to react with internalizing symptoms due to the expectations placed upon them. Girls have been shown to be more prone to internalizing symptoms, perhaps because of their greater need for social harmony (Davies and Windle, 1997). This desire is related to the fact that girls typically

have closer and more disclosing relationships with others in their social networks (Furman and Buhrmester, 1992), and conflict in these relationships often leads girls to react with fear, distress, and internalizing symptoms (Davies and Lindsay, 2004).

Age X Sex. The somewhat inconsistent findings regarding whether sex or age moderate associations between parental marital conflict and outcomes could be due to changes in sex-differential vulnerability by age, suggesting the possibility of three-way interactions among sex, age, and parental marital conflict in the prediction of outcomes (Cummings, Davies, & Simpson, 1994; Dahl & Gunnar, 2009; Davies & Windle, 1997; Gerard et. al, 2005; Kerig, 1996; Kim et.al, 2006; Natsuaki et. al, 2009). How might this sex X age-differential vulnerability to stressors such as parental marital conflict come about? Dahl and Gunnar (2009) suggest that the changes of early adolescence may contribute to increased reactivity and responsiveness to social and emotional stressors, such as parental marital conflict, especially in girls. Consequently, girls may become more maladjusted in the face of parental marital conflict starting only in adolescence, while boys are more affected at younger ages.

Support for this notion comes from a study by Natsuaki and colleagues (2009). They found that adolescent girls (ages 11 to 16 years old) displayed higher reactivity (measured via cortisol) to interpersonal stressors compared to boys, and that high stress reactivity was more strongly associated with depressive symptoms. Thus, starting in adolescence, girls may have a stronger physiological reaction to interpersonal stressors, such as parental marital conflict, than boys, increasing their risk for maladjustment. The finding of greater sensitivity to stressors in adolescent girls has also been supported by

other studies. Davies and Lindsay (2004), for example, found that parental marital conflict was a stronger predictor of internalizing symptoms (depression and anxiety) in adolescent girls than in boys (ages 10 to 15). Similarly, Davies and Windle (1997) found that family discord was more strongly associated with adolescent girls' (ages 16 to 18 years old) problem behaviors and depressive symptoms compared to boys. A study by Gerard and colleagues (2005) also found that the link between perceived self-blame for parental marital conflict and internalizing problems was stronger for adolescent girls (ages 11 to 12 years old).

Together, these findings suggest that before adolescence, associations between parental marital conflict and outcomes may be stronger for boys than for girls. During adolescence, this sex-differential vulnerability may reverse. To my knowledge, this type of three-way interaction has not been detected in the marital conflict literature as of yet, but looking at sex differences in the context of age could further illuminate associations between parental marital conflict and outcomes.

The Present Study

The proposed study will examine associations between parental marital conflict and youth maladjustment and sibling conflict. To our knowledge, this is one of the first studies examining parent and youth-reported frequency of parental marital conflict and youth reports of involvement in parental marital conflict simultaneously. Taking into account potential moderation by sex and age will further illuminate the linkages between parental marital conflict, youth maladjustment, and sibling conflict.

Primary Hypotheses

Hypothesis 1. Youth reports of the frequency of parental marital conflict will be associated with internalizing and externalizing symptoms over and above parental reports of the frequency of marital conflict. Youth who report higher levels of parental marital conflict will also report higher levels of internalizing and externalizing symptoms.

Hypothesis 2. Youth involvement in parental marital conflict will predict internalizing and externalizing symptoms over and above parent and youth reports of the frequency of parental marital conflict. Youth who report higher levels of involvement in parental marital conflict will also report higher levels of maladjustment.

Hypothesis 3. Youth reports of parental marital conflict and involvement in parental marital conflict will be associated with sibling conflict. Youth reports of the frequency of parental marital conflict will be associated with sibling conflict over and above paternal reports of the frequency of marital conflict, and youth involvement will predict sibling conflict over and above parent and youth reports.

Secondary Hypothesis

Hypothesis 4. The association between indicators of parental marital conflict and poor adjustment will be strongest for younger boys and older girls. In the absence of a three-way interaction, I predict that associations between indicators of parental marital conflict and poor adjustment will be stronger for younger and male youth than for older and female youth.

CHAPTER II

METHOD

Participants

Participants came from two cohorts from the Right Track study, which focuses on the emotional and social development of children at risk for disruptive behaviors. One cohort consisted of 153 individuals, recruited at age 2 in 2000. Individuals were screened using maternal reports on the Child Behavior Checklist externalizing scale (CBCL 2-3; Achenbach, 1991) in order to over sample for externalizing behaviors. Specifically, children with externalizing T scores above 60 (i.e., 1 SD above the mean on externalizing behaviors) were oversampled. The other cohort consisted of 140 individuals who were recruited in 1998, when they were 6 months of age. There were no significant demographic differences between cohorts with regard to gender, race, and socioeconomic status at recruitment. Both cohorts were recruited from child day care centers, the Women, Infants, and Children (WIC) program, and the County Health Department.

The sibling study was implemented when target children (i.e., children who had participated in the Right Track project since infancy) were 10.5 years old. All families ($N=113$) who had a sibling between the ages of 9-18 living at home were recruited for this part of the study. Ninety two percent ($N = 104$) of the families eligible for the sibling study decided to participate, resulting in a total of 208 children. Families who chose not to participate in the sibling study either did not participate in the longitudinal study at this

time-point or later had problems scheduling a time for both children to participate ($N = 9$). Several mothers and their target children had already completed data collection however, even though the sibling was eventually unable to come to the visit. Therefore, the resulting total sample for the sibling study was 204 children from 104 families.

To be included in the present study, families had to indicate “intact” marital status, resulting in a sample size of 165 youth. For the majority of families, this marriage was their first; 3 mothers indicated that they had re-married. All of these families indicated having both parents present in the household. All families with complete measures of the frequency and involvement in parental marital conflict were included for the present study. There were no significant differences (in terms of study variables or descriptive variables) between youth who did and did not complete these measures related to conflict.

Target children were all 10.5 years old during participation in the sibling study, with 52% males and 48% females. Siblings’ ages ranged from 9 to 18 years of age ($M = 12.82$, $SD = 2.35$). Siblings were also approximately equally divided into males (52%) and females (48%). Most of the sample was Caucasian (65.4%), followed by African-American (24.2%), “other” (2.6%), and biracial (2.1%) status. Hollingshead scores (Hollingshead, 1975) indicated that families participating in the sibling study were socioeconomically diverse ($M = 48.30$, $SD = 10.39$), and were calculated using a weighted average of parental education and employment. Table 1 contains demographic statistics for all participants.

Procedure

Consent from mothers and assent from youth was obtained before their participation in the study. The majority of participants completed their questionnaires in our research laboratory; and a small minority completed them at home. Participants aged 12 years or younger were read the questionnaires by trained research assistants, and privately recorded their answers. Participants aged 12 years or older completed the questionnaires in a private setting, but research assistants were available to answer any questions. Mothers completed separate questionnaires for each child in a private room. Mothers received a \$30 honorarium for their participation in the sibling study, and youth received a small, age-appropriate gift.

Measures

Externalizing symptoms were assessed using two externalizing subscales of the Child Behavior Checklist (CBCL; Achenbach, 1991). Mothers completed these subscales. The CBCL has been found suitable for use with children ages 6 to 18, and Cronbach's alphas were .91 and .89 for siblings and target children, respectively. Thirty-five items on the CBCL were rated on a 3-point scale (e.g., "0 = *Not true*", "1 = *Sometimes true*", "2 = *Often true*"). The subscales used in the externalizing measure are a rule breaking behavior subscale and an aggressive behavior subscale. The rule breaking subscale includes 17 items related to rule breaking behavior (e.g., "Drinks alcohol without parents' approval", "Doesn't seem to feel guilty after misbehaving", "Breaks rules at home, school, or elsewhere"). The aggressive behavior subscale includes 18 items related to aggressive action by the child (e.g., "Argues a lot", "Demands a lot of

attention”, “Gets in many fights”). T-scores were used because they are adjusted for sex and age of the child, and we were interested in symptoms relative to the age-level and sex of the youth involved. These T scores have a mean value of 50 and a standard deviation of 10.

Externalizing symptoms were also assessed using youth self-report on the “Things I Do” portion of the Risky Behavior Questionnaire (Conger & Elder 1994). The scale consisted of 19 questions assessing youth involvement in a range of risk-taking behaviors (e.g., “Skipping school”, “Fighting”, “Smoking”, “Destroying property”). Items were rated on a 3-point scale (e.g., “0 = *Never*”, “1 = *Once or twice*”, “2 = *More than two times*”). A sum score was used, with higher scores indicating more risk-taking behaviors. Cronbach’s alphas were .93 and .75 for siblings and target youth, respectively.

Internalizing symptoms were also assessed using the CBCL. The child’s mother completed this measure. The Cronbach’s alphas were .85 and .88 for sibling and target youth, respectively. Thirty two items on the CBCL were rated on a 3-point scale (e.g., “0 = *Not true*”, “1 = *Sometimes true*”, “2 = *Often true*”). The subscales contained within the internalizing scale are an anxious/depressed subscale, a withdrawn/depressed subscale, and a somatic complaints subscale. The anxious/depressed subscale includes 13 items related to behaviors that indicate anxiety and depression (e.g., “Cries a lot”, “Fears going to school”, “Self-conscious or easily embarrassed”). The withdrawn/depressed subscale includes 8 items related to behaviors that indicate withdrawal and depression (e.g., “There is very little he/she enjoys”, “Would rather be alone than with others”, “Refuses to talk”). The somatic complaints subscale includes 11

items related to somatic internalizing symptoms (e.g., “Nightmares”, “Overtired without good reason”, “Feels dizzy or lightheaded”). Similar to externalizing symptoms, T-scores were used here.

Internalizing symptoms were also assessed with youth self-reports on the Children’s Depression Inventory (CDI; Kovacs, 1992). Youth completed 25 items on this scale, with each item consisting of three sentences (e.g., “0. *I am sad once in a while*”, “1. *I am sad many times*”, “2. *I am sad all the time*”). Youth were asked to choose the sentence for each item that best described them over the past two weeks. Cronbach’s alphas were .87 and .92 for siblings and target youth, respectively. The summed total CDI scores were used, with higher scores indicating higher depressive symptoms.

Sibling conflict was measured using 5 items from the Sibling Relationship Inventory (SRI; Stocker & McHale, 1992), each of which was completed on a scale from 1 to 5. A response of 1 indicated strong disagreement; a response of 5 indicated strong agreement. This scale assesses individuals’ perceptions of conflict with their sibling. Cronbach’s alphas were .79 and .81 for siblings and target children, respectively. Items included in this measure indicate the level of sibling conflict (e.g., “How often do you feel mad or angry at your brother/sister”, and “How often do you tease, bug, or call your brother/sister names”). A summed total on the conflict measure was used, with higher scores indicating a higher level of conflict.

Mother report of parental marital conflict was measured using a portion of the Dyadic Adjustment Scale (Busby et. al., 1995). Mothers completed 10 items, measured on a 5-point Likert scale, with 5 indicating strong agreement (e.g., “do have

disagreements regarding this topic”). Topics included religious matters, sexual relations, and career decisions. The summed total of these items were used to represent the frequency of parental marital conflict as reported by the mother. Cronbach’s alpha was .92, indicating good internal consistency.

Youth reports of the frequency of parental marital conflict were measured using 7 items from the Family and Neighborhood Risk Scale (Shanahan, 2007), and a 5-point Likert scale. A response of 1 indicated strong disagreement, whereas a response of 5 indicated strong disagreement. Example items included “My parents argue and fight more than once a week” and “My parents are often angry at each other.” The summed total of these items was used to represent an overall parental marital conflict score. Cronbach’s alphas were .81 and .78 for siblings and target youth, respectively.

Youth involvement in parental marital conflict was measured using 4 items from the Family and Neighborhood Risk Scale, each of which was completed on a scale from 1 to 5. A response of 1 indicated strong disagreement, a response of 5 indicated strong agreement. Example items include “When my parents fight or argue, I try to stop them” and “When my parents fight or argue, I get upset.” The summed total was used to represent an overall child involvement score. This scale assesses both direct, behavioral involvement and more indirect, emotional involvement in parental marital conflict by youth. Cronbach’s alphas were .67 and .62 for siblings and target children, respectively.

Maternal depressive symptoms were measured using the depression subscale of the Symptom Checklist 90-R (Derogatis, L.R, 1977). This subscale included 13 items, and consisted of a 5-point Likert scale, with a response of 0 indicating no distress, and a 5

indicating extreme distress during the past 7 days. Example items included “Feeling lonely”, and “Feeling low in energy or slowed down”. T-scores from this measure were used. Cronbach’s alpha was .91, indicating good internal consistency.

Maternal report of *parent-child relationship quality* was measured using 15 items on the Child-Parent Relationship Scale. This scale was adapted from the Student-Teacher Relationship Scale (STRS; Pianta, 1992). This scale consisted of a 5-point Likert scale (1 = *definitely does not apply* to 5 = *definitely applies*). Example items included “I share an affectionate, warm relationship with my child,” and “If upset, my child will seek comfort in me.” The summed total of these items was used to represent an overall quality of child-parent relationship, with a higher value representing a more positive/affectionate quality of relationship. Cronbach’s alphas were .87 and .84 for siblings and target youth, respectively.

Sibling sex constellation (0 = *same-sex*, 1 = *opposite-sex*) was also included as a control variable in all analyses using sibling conflict as an outcome.

CHAPTER III

RESULTS

Analytic Strategy

For all analyses, data from both youth in the family were stacked. Thus, both siblings' data were included in each analysis rather than analyzing the sibling and target children separately. However, because siblings come from the same family, the independence of observations assumption typically made in regression analyses could be violated. In order to adjust standard errors for this, the SVYSET procedure in STATA was used. This procedure estimates accurate standard errors for designs that involve correlated data. In addition, hierarchical regression procedure in STATA (HIREG) was used to examine how much variance different indicators of marital conflict explained in each outcome variable. Predictors were entered in a stepwise fashion. At step 1, demographic control variables (e.g., child sex and age) were entered, followed by maternal depressive symptoms and parent-child relationship at step 2. Maternal report of parental marital conflict was added at step 3, and lastly, at step 4, youth report of parental marital conflict was added. This stepwise approach was chosen in order to understand whether youth reports of the frequency of parental marital conflict significantly added to the prediction of outcomes over and above parental reports of the frequency of parental marital conflict

Descriptive Analyses and Correlations

Descriptive statistics indicated significant positive skew for youth self-reports of both internalizing and externalizing symptoms (skewness = 2.3, kurtosis = 6.2; skewness = 2.4, kurtosis = 8.5, for risky behaviors and depressive symptoms, respectively).

Square-root transformations corrected these violations of normality, and all analyses were run using the transformed outcomes (skewness = .79, kurtosis = 1.2; skewness = .49, kurtosis = .51, for square-root transformed youth-reported internalizing and externalizing symptoms, respectively). Table 3 shows the correlations between demographic and study variables. Below, we discuss correlations between each indicator of marital conflict and other study variables.

Maternal Report of Parental Marital Conflict (Column 1 in Table 3)

Pearson correlations indicated that maternal report of parental marital conflict was positively associated with youth reports of parental marital conflict ($r = .34, p < .01$): Higher levels of maternal reports of marital conflict were associated with higher levels of youth reports of parental marital conflict. Maternal report of parental marital conflict was also positively associated with maternal report of externalizing ($r = .32, p < .01$) and internalizing ($r = .28, p < .01$) symptoms: Higher levels of maternal reports of marital conflict were associated with higher levels of externalizing and internalizing behaviors. Maternal reports of marital conflict were not, however, associated with youth reports of maladjustment.

Parental marital conflict was also positively associated with sibling conflict ($r = .22, p < .01$), such that more parental marital conflict was associated with more sibling

conflict. Finally, parental marital conflict was significantly associated with the control variables. Indeed, higher marital conflict was associated with more maternal depressive symptoms ($r = .57, p < .01$), and a less positive/affectionate mother-child relationship ($r = -.24, p < .01$).

Youth Report of Parental Marital Conflict (Columns 2-5 in Table 3)

Higher frequency of parental marital conflict was associated with more youth-reported externalizing ($r = .39, p < .01$) and internalizing symptoms ($r = .28, p < .01$).

Youth reports of the frequency of marital conflict were not, however, associated with maternal reports of maladjustment. Youth report of parental marital conflict was positively associated with youth report of sibling conflict ($r = .26, p < .01$): More youth-reported parental marital conflict was associated with more youth-reported sibling conflict.

Involvement in parental marital conflict had no significant association with any study variable. However, when youth involvement was divided into its behavioral and emotional aspects, behavioral involvement was negatively associated with maternal report of externalizing behavior ($r = -.15, p < .05$): More behavioral involvement was associated with lower maternal reports of externalizing behavior. Emotional involvement was positively associated with maternal report of internalizing behavior ($r = .17, p < .05$): children's higher emotional involvement in parental marital conflict was associated with more internalizing symptoms.

Testing all Hypotheses

Hypothesis 1 was tested using two sets of regression models (one set used maternal and child reports of externalizing symptoms as outcomes, and another set used maternal and child reports of internalizing as outcomes). Specifically, in 4 separate regression models, externalizing and internalizing symptoms were regressed onto demographic variables, maternal control variables (e.g., maternal depressive symptoms), and reports of parental marital conflict. As described above, a stepwise approach was used.

Externalizing Behaviors. Results for externalizing behavior outcomes are shown in Table 4. The left side of the table shows results for models using maternal reports of externalizing behaviors as the outcome variable, and the right side shows results for models using youth reports of externalizing behaviors as the outcome. The only significant predictors of maternal reports of externalizing behavior were the two maternal control variables, maternal depressive symptoms and parent-child relationship ($B = .26, p < .001$, and $B = -.53, p < .001$, respectively), resulting in a significant R-squared change ($\Delta R^2 = .37, p < .001$). Specifically, more maternal depressive symptoms were associated with more externalizing behaviors; a more positive and affectionate parent-child relationship was associated with fewer externalizing behaviors.

In the regression model for youth-reported externalizing behavior, age ($B = .24, p < .001$) and sex ($B = .30, p < .05$) were significant predictors at step 1, and resulted in an R-squared change ($\Delta R^2 = .22, p < .001$). With increasing age, children reported more externalizing (i.e., risky) behavior. Furthermore, boys reported more externalizing

behaviors than girls. Maternal report of marital conflict, entered at step 3, was not a significant predictor of youth reported externalizing behavior. Youth report of parental marital conflict, entered at step 4, was a significant predictor ($B = .05, p < .01$), and its addition resulted in a significant R-squared change ($\Delta R^2 = .05, p < .01$). Specifically, youth who reported more marital conflict also tended to report more externalizing behaviors.

In sum, results for externalizing behaviors show that maternal reports of externalizing behaviors were only predicted by maternal depressive symptoms and parent-child relationship, but not by any of the marital conflict variables. Youth reports of externalizing behaviors were predicted by youth reports of the frequency of parental marital conflict, taking into account the significant variance already explained by sex and age.

Internalizing Symptoms. Table 5 contains the results of hierarchical regression models predicting both maternal and youth reports of internalizing symptoms. Similar to the finding on externalizing symptoms, the only significant predictors of maternal reports of internalizing symptoms were the two maternal control variables, maternal depressive symptoms and parent-child relationship ($B = .35, p < .001$, and $B = -.41, p < .001$, respectively). Their addition resulted in a significant R-squared change ($\Delta R^2 = .30, p < .001$). Specifically, more maternal depressive symptoms were associated with more internalizing symptoms, and a positive/affectionate parent-child relationship was associated with fewer internalizing symptoms.

With respect to youth-reported internalizing behavior, maternal depressive symptoms and parent-child relationship at step 2 yielded an R-squared change that approached significance ($\Delta R^2 = .04, p < .10$), but none of the individual regression coefficients were significant. Maternal report of marital conflict, entered at step 3, was not a significant predictor of youth reported internalizing behavior. Indeed, only youth report of parental marital conflict was a significant predictor ($B = .06, p < .01$), and resulted in a significant R-squared change ($\Delta R^2 = .05, p < .01$) when entered at step 4. Specifically, more youth reported marital conflict was associated with more internalizing symptoms.

Taken together, results for internalizing symptoms indicated that maternal reports of internalizing symptoms were predicted by maternal reports of their depressive symptoms and parent-child relationship quality; maternal and youth reports of parental marital conflict did not explain additional variance in the prediction of maternal reports of internalizing behavior over and above these maternal control variables. On the other hand, models of youth reported internalizing symptoms indicated that youth reports of parental marital conflict were associated with internalizing behaviors over and above maternal reports of parental marital conflict, confirming Hypothesis 1.

Hypothesis 2 (regarding the additional role of youth involvement in parental marital) was tested by entering an additional step (step 5) to the regression models explained above (see last rows of Table 4 and 5). This additional step was used to determine whether youth involvement in parental marital conflict was associated with

externalizing and internalizing behaviors over and above both parent and youth reports of the frequency of parental marital conflict.

Results showed that youth involvement did not contribute to a significant R-squared change in the prediction of externalizing or internalizing outcomes; the regression coefficients for youth involvement in parental marital conflict were also not significant in any of these models. Results remained non-significant even when youth involvement was divided into its behavioral and emotional components. Thus, results are inconsistent with Hypothesis 2.

Hypothesis 3 (parental marital conflict will be associated with sibling conflict) was also tested using a hierarchical regression model, using the same steps described above. Because sibling conflict was only reported by youth, only one regression model was run here. Results for this regression model can be seen in Table 6. At step 3, maternal reported parental marital conflict ($B = .16, p < .001$) was as a significant predictor of sibling conflict, and its addition resulted in a significant R-squared change ($\Delta R^2 = .09, p < .001$). Specifically, more maternal report of marital conflict was associated with more sibling conflict. In the next step, the addition of youth reported parental marital conflict resulted in an R-squared change that approached significance ($B = .10, p < .10, \Delta R^2 = .02, p < .10$). Specifically, more youth reported parental marital conflict was associated with more sibling conflict. Thus, there is some support for Hypothesis 3: The results suggest that youth reported parental marital conflict may explain a small, but marginally significant amount of variance beyond the significant variance explained by maternal reports of marital conflict. Youth involvement in

parental marital conflict was not significantly associated with sibling conflict, and did not explain significant variance in this outcome (nor did the separate behavioral and emotional involvement scales).

Hypotheses 4 (secondary hypothesis regarding moderation by age and sex) was tested by adding more steps to the regression models tested above. In an additional step, the three two-way interactions involving parental marital conflict, age, and sex were added, followed by the three way interaction of these variables in a next step. These two- and three-way interactions were tested in separate models for each: Parental and youth reports of the frequency of marital conflict and for youth involvement in parental marital conflict. Results showed that these additional steps did not explain additional variance in the outcomes, and that the interaction coefficients were non-significant.

CHAPTER IV

DISCUSSION

Parents and their children may differ in their perceptions of parental marital conflict (Buehler & Welsh, 2009; Harold et. al., 1997; Kerig, 1995; Ulu & Fisiloglu, 2002). Therefore, a primary goal of this study was to examine whether youth reports of the frequency of parental marital conflict predicted youth adjustment and sibling conflict over and above parental reports. Past research also suggested that youth involvement in parental marital conflict may be an additional factor that should be studied over and above the frequency of marital conflict in predicting outcomes. Thus, we also included youth involvement as an indicator of marital conflict in our analyses. Finally, there was some evidence in past research that associations between marital conflict and outcomes vary by age and gender (Cummings, Davies, & Simpson, 1994; Dahl & Gunnar, 2009; Davies & Windle, 1997; Gerard et. al, 2005; Kerig, 1996; Kim et.al, 2006; Natsuaki et. al, 2009); thus, a secondary aim of this study was to examine youth age and gender as potential moderators of all associations examined here.

Associations with Youth Adjustment

Frequency of parental marital conflict and youth adjustment. Although significant correlations between maternal reports of marital conflict and youth adjustment were identified, the hierarchical regression models showed that these associations were no

longer significant once maternal depressive symptoms and parent-child-relationships had been taken into account. Several previous studies had not controlled for maternal depressive symptoms when examining the association between parental marital conflict measures and youth adjustment. Our study showed that maternal depression and marital conflict are quite highly correlated, and that maternal depression may be a third variable, or confound, in the association between parental marital conflict and adjustment. Mothers with high depression scores may have negative views and/or experiences in a number of social relationships, including marital and parent-child relationships (Cummings & Davies, 1994). Had previous studies consistently controlled for maternal depression, findings regarding the association between parental marital conflict and child adjustment may be less robust (Amato & Afifi, 2006; Kerig, 1996; Wang & Crane, 2001).

Our results did identify associations between youth-reported parental marital conflict and both externalizing and internalizing problems. Although this association may, in part, be due to shared methods variance (discussed below), this finding also appears to support the idea that assessing youths' own perceptions of their environment is important in the quest for understanding the development of psychopathology. The positive association between youth reports of the frequency of marital conflict and maladjustment could, in part, be the result of the social learning processes reported: Youth who observe parental marital conflict may be more likely to then apply some of the behaviors observed in their own interactions, resulting in higher externalizing behaviors (Mihalic & Elliott, 1997; Schudlich, Shamir, & Cummings, 2004; Snyder, Bank, & Burraston, 2005; Wiese & Freund, 2011). Consistent with a stress perspective,

the increased behavior problems may also be a reflection of distress that children experience when they see their parents fight (Gerard et. al, 2005; Grych & Fincham, 1993; Lupien et al., 2006). Furthermore, consistent with a family systems approach, youth may act out or internalize to distract their parents from conflict (Katz & Gottman, 1993).

Youth involvement in parental marital conflict and youth adjustment: Youth involvement in marital conflict variable was not associated with youth adjustment. This finding was inconsistent with past research, for example, on triangulation (Buehler, Franck, & Cook, 2009; Grych, Raynor, & Fosco, 2004) that had shown that when youth get involved in the negative marital dynamics of parents, they may be at particular risk for psychopathology (Buehler & Welsh, 2009; Wang & Crane, 2001). This past research was mostly based on parental reports of this type of involvement or observer ratings. Although the goal was to tap into youth's own perceptions of their involvement, it may be that youth are not aware of their own involvement in parents' conflict, or that they are poor reporters of it. Future research should use observational, parental, and child measures simultaneously to better understand how youth involvement in parental marital conflict is best captured, and when and how it is associated with maladjustment.

Associations with Sibling Conflict

Another goal of this study was to examine the associations between the various reports of parental marital conflict and sibling conflict, grounded in family systems perspective. The analysis of spillover of parents' conflict into siblings' relationships was

fairly novel, and represented an extension of the spillover research already completed on the association between parent's conflict and the parent-child relationship (Erel & Burman, 1995). Results showed that maternal and youth reports of parental marital conflict independently accounted for variance in sibling conflict, even when covariates were accounted for. Thus, maternal reports and youth reports of parental marital conflict appear to make independent contributions in explaining variance in sibling conflict.

There are several ways in which these reports could make their independent contributions to sibling conflict. Maternal reports of parental marital conflict may be more associated with chains of family conflict that spill over to sibling conflict, while child reports may be more related to social learning and imitation. As previously discussed, this imitation may lead to conflict behaviors that are used in siblings' other relationships. Although the additional contributions by youth reports over maternal reports of parental marital conflict were relatively small and only marginally significant, they may still be a meaningful in terms of a complete model for understanding sibling conflict.

This study's support for hypothesis 3 was also interesting in light of the findings that maternal reports of parental marital conflict were not significantly associated with adjustment outcomes. Perhaps the type of marital conflict reported by parents is more easily transferrable or relevant to sibling conflict than to individual adjustment. The parental measure of conflict focused on frequency of disagreements, which is perhaps more easily recognized and mimicked in sibling interactions than it is relevant to youth

adjustment. Taken together the differences in findings between the individual adjustment and the sibling conflict outcomes suggest that a fine-grained analyses of how different members of the family system perceive marital conflict may be most useful when relating it to a similar family dynamic (e.g., sibling conflict), as opposed to individual adjustment scales (e.g., internalizing and externalizing symptoms).

Sex and Age as Moderators

A secondary goal of this study was to test whether younger youth and boys would display a stronger association between parental marital conflict and maladjustment. A few previous studies had suggested possible moderation by sex and age, but few studies had actually tested such interactions (see Lindsay & Davies, 2001). We also tested a three way interaction, expecting that younger boys would display the strongest association between parental marital conflict and maladjustment.

The non-significant interactions of marital conflict, age, and sex in the prediction of outcomes indicate that, in the present study, associations between the marital conflict variables and the outcomes are similar for girls and boys, and for children of different ages within the age range of 9-18 years. Such similarities in associations had been reported in some previous research (Buehler et al., 1997; Emery, 1982), and may reflect marital conflict as a family dynamic that affects both family climate and adjustment outcomes of individual family members. Alternatively, it could be that the differences in associations between the genders and ages are quite small, and that they can only be

detected in larger studies with sufficient sample size to detect small differences in effects between subgroups.

Limitations

This study has several limitations. First, stress research suggests that we need to know youth perceptions of the stressors that they encounter and also their feelings (Ablow, Measelle, Cowan, & Cowan, 2009; Jenkins & Bucci, 2000; Lupien et al., 2006). At the same time, because children (and parents) may have particular reporting biases in reporting (Achenbach, McConaughy, & Howell, 1987), mono-reporter bias may inflate correlations between scales assessed by the same reporter, a pattern that appeared to be evident in Table 3. Nevertheless, there was evidence of cross-reporter associations, especially between parental-reported marital conflict and youth-reported sibling conflict, which are noteworthy.

Second, data were collected cross-sectionally, thus no conclusions about direction of effect can be drawn. Indeed, when the word “prediction” was used in this study, it referred to prediction in the statistical, and not in the “across-time” sense, and no firm conclusions can be drawn about whether marital conflict predicts maladjustment and sibling conflict or vice versa.

Third, sample size was moderate, limiting statistical power to detect small two, and three-way interactions. The power analyses conducted before hypothesis testing indicated sufficient power to detect medium effect sizes (Cohen, 1992), but a larger

sample size would allow more certainty, and also the ability to detect smaller significant interactions.

Finally, this study was based on an archival dataset. If a new study should collect similar data, several recommendations could be made. Maternal and youth measures of the frequency of marital conflict should be matched more closely. In the present study, maternal measures assessed areas of disagreement whereas the youth measure assessed the frequency of typical displays of conflict. In a future study, parent and youth measures should be more closely matched or completely parallel. In a new data collection, the measure of youth involvement in parental marital conflict should include a larger number of items, and include items that more accurately capture youths' emotional distress and mediational role in their parents' conflict. For instance, an item that asks youth how often they cry after being exposed to parental marital conflict would be helpful in capturing youths' emotional distress, while an item that asks youth how often they listen to one parent talk about another after parental marital conflict would aid in a more clear understanding of the mediational role of youth in parents' conflict.

Future Research

There are several directions for future research. First, future studies should consider asking multiple reporters about parental marital conflict in order to get a clearer picture of what is taking place within the family system. Indeed, additional attention needs to be paid to how parental marital conflict affects family sub-systems instead of only individuals. This argument is strengthened by the results of this study, which

demonstrate that, while individual outcomes were only moderately associated with conflict measures, outcomes related to family function (sibling conflict) were significantly associated with these predictors. This type of research should also go beyond the cross-sectional models examined here, and examine associations over time.

Second, marital conflict is a stressor that often does not occur in isolation. Future research could also include additional factors that are known risk factors for the development of internalizing and externalizing symptoms, including other psychosocial factors such as verbal ability (Seguin et al., 2009) and emotion regulation (Rubin et al., 1995), and biological factors such as cortisol reactivity and testosterone levels (Dahl & Gunnar, 2009; Natsuaki et al., 2009). Other social factors that should perhaps be included are having deviant peers and exposure to significant life stress events. Including these additional factors could increase the percentage of variance explained in youth-reported internalizing symptoms and sibling conflict.

Finally, an important direction for future research is to examine additional moderators (e.g., biological sensitivity, self-regulation) that help determine which children are most at risk during marital conflict. For example, Belsky et al. (2009) have done several studies to determine the role of “plasticity genes” on individuals’ susceptibility to environmental stressors, stressors such as exposure to parental marital conflict. These genes have been shown to increase susceptibility to environmental stressors, for better or worse. Biological moderators such as these plasticity genes should be examined in future research related to marital conflict and youth maladjustment.

Nevertheless, our study highlights the importance of using multiple reporters when attempting to address the association of parental marital conflict and youth maladjustment. In our study, mother-reported parental marital conflict was not associated with externalizing or internalizing problems in youth, while youth-reported parental marital conflict was associated with both problem behavior outcomes, perhaps emphasizing the importance of youths' perceptions of parental marital conflict on their adjustment. Our study also suggests that mother and youth-reported parental marital conflict independently account for variance in sibling conflict, indicating that multiple reporters of parental marital conflict are useful when addressing associations with similar, conflict-oriented, family dynamics.

Table 1. Descriptive Statistics for Demographic Measures

Variable	N	%	M	SD	Minimum	Maximum
Child Gender						
Male	86	52				
Female	79	48				
Ethnicity						
African American	32	19				
Caucasian	124	75				
Mixed	4	3				
Other	5	3				
Child Age (in years)			11.62	2.02	9	18
Hollingshead (SES)			48.30	10.39	15	66

Table 2. Descriptive Statistics for Study Variables

	N	M	SD	Min	Max
Youth Report					
1. Externalizing Symptoms*	150	2.17	1.04	0	5.83
2. Internalizing Symptoms*	149	2.06	1.29	0	6.63
3. Marital Conflict	165	14.54	4.75	7	31
4. Youth Involvement	165	10.65	3.11	4	16
5. Youth Involvement Behavioral	165	7.43	2.40	3	13
6. Youth Involvement Emotional	165	3.22	1.23	1	5
7. Sibling Conflict	165	11.84	3.43	5	25
Maternal Report					
1. CBCL Externalizing Symptoms	153	46.30	9.98	33	80
2. CBCL Internalizing Symptoms	153	47.01	10.58	33	75
3. Marital Conflict	157	13.23	7.30	3	48
4. Parent-Child Relationship	153	62.38	8.87	39	75
5. Maternal Depression	155	48.90	10.37	34	75

* Values represent square root transformation

Table 3. Pearson Correlations for All Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Mother Report of Marital Conflict	1													
2. Youth Report of Marital Conflict	.34**	1												
3. Youth Involvement	-.02	-.03	1											
4. Youth Involvement Behavioral	-.03	.00	.93**	1										
5. Youth Involvement Emotional	.00	-.06	.71**	.40**	1									
6. Mother Report Externalizing	.32**	.04	-.10	-.15*	.03	1								
7. Mother Report Internalizing	.28**	-.06	.03	-.05	.17*	.54**	1							
8. Risky Internalizing Sqrt.	.11	.39**	-.06	-.02	-.12	.19*	-.10	1						
9. CDI Internalizing Sqrt.	.08	.28**	-.06	-.07	-.03	.15*	.00	.33**	1					
10. Sibling Conflict	.22**	.26**	-.03	-.04	-.01	.18*	-.12	.40**	.37**	1				
11. Sex	-.13	-.09	.06	.10	-.05	.10	-.10	.09	-.08	.05	1			
12. Age	-.02	.15*	.00	.07	-.15*	-.07	.02	.45**	.04	-.01	-.14*	1		
13. Parent-Child Relationship	-.24**	-.08	.10	.08	.09	-.53**	-.40**	-.17*	-.18*	.01	-.03	-.14*	1	
14. Maternal Depression	.57**	.05	-.10	-.10	-.06	.39**	.43**	.07	.08	.11	-.06	-.01	-.22**	1

Note: * $p < .05$, ** $p < .01$

Table 4. Hierarchical Regression of Mother and Youth Report of Externalizing Symptoms onto Reports of MC and Youth Involvement

Mother-Reported Externalizing					Youth-Reported Externalizing				
Predictor Variables	<i>B</i>	<i>S.E</i>	<i>R</i> ²	ΔR^2	Predictor Variables	<i>B</i>	<i>S.E</i>	<i>R</i> ²	ΔR^2
Step 1			.01	.01	Step 1			.22	.22***
Sex	1.78	1.68			Sex	.30*	.15		
Age	-.29	.39			Age	.24***	.04		
Step 2			.38	.37***	Step 2			.24	.02
Maternal Depression	.26***	.08			Maternal Depression	.00	.01		
P/C Relationship	-.53***	.09			P/C Relationship	-.01	.01		
Step 3			.39	.01	Step 3			.25	.01
Mother Report of MC	.12	.09			Mother Report of MC	.02	.01		
Step 4			.39	.00	Step 4			.30	.05**
Youth Report of MC	-.15	.16			Youth Report of MC	.05**	.02		
Step 5			.40	.01	Step 5			.31	.00
Youth Involvement	-.28	.19			Youth Involvement	-.02	.02		

†*p* < .10, **p* < .05, ***p* < .01, ****p* < .001

Table 5. Hierarchical Regression of Mother and Youth Report of Internalizing Symptom onto Reports of MC and Youth Involvement

Mother-Reported Internalizing					Youth-Reported Internalizing				
Predictor Variables	<i>B</i>	<i>S.E</i>	<i>R</i> ²	ΔR^2	Predictor Variables	<i>B</i>	<i>S.E</i>	<i>R</i> ²	ΔR^2
Step 1			.01	.01	Step 1			.01	.01
Sex	-2.13	1.65			Sex	-.20	.21		
Age	.01	.39			Age	.02	.05		
Step 2			.31	.30***	Step 2			.05	.04†
Maternal Depression	.35***	.10			Maternal Depression	.01	.01		
P/C Relationship	-.41***	.11			P/C Relationship	-.02	.01		
Step 3			.31	.00	Step 3			.05	.00
Mother Report of MC	.00	.16			Mother Report of MC	.00	.02		
Step 4			.32	.01	Step 4			.10	.05**
Youth Report of MC	-.27	.16			Youth Report of MC	.06**	.02		
Step 5			.33	.00	Step 5			.10	.00
Youth Involvement	-.17	.26			Youth Involvement	.02	.03		

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. Hierarchical Regression of Youth-Reported Sibling Conflict onto Child Reports of MC and Youth Involvement

Predictor Variables	<i>B</i>	<i>S.E</i>	<i>R</i> ²	ΔR^2
Step 1			.00	.00
Sex	.40	.48		
Age	.02	.12		
Sibling Dyad	-.03	.64		
Step 2			.02	.01
Maternal Depression	.03	.03		
Parent-Child Relationship	.03	.03		
Step 3			.10	.09***
Mother Report of MC	.16***	.04		
Step 4			.12	.02†
Youth Report of MC	.10†	.06		
Step 5			.12	.00
Youth Involvement	.04	.08		

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

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